Potters Gate Primary & St Andrew's Infant Schools
Curriculum Subject Progression - Science

Science	School Curriculum Intent	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year R	<u>Knowledge</u> What will children know at the end of this unit of work?	Our wonderful world Personal science – biology. Our differences and similarities – we have different coloured hair but all use our lungs to breath etc. Space – looking at the universe	Nebrations/Autumn natural science – autumn – life and death. Weather. Freezing and malting.	Brilliant beasts – fossils and the history dinosaurs on earth. Egg drop experiment.	People Who help us. Doctors – medicine. How to keep healthy. Police – looking for clues (forensic science) Farms – where our food comes from – growing food. Science week.	Minibeasts Our local environment – plants, wildlife, mini beasts. What is a minibeast.	Traditional tales - baking a gingerbread man- what happens to biscuits in liquid – making a bridge or boat for the gingerbread man to cross the river- floating and sinking.
	<u>Skills</u> As an expert in this subject children will be able to …	Talk about parts of the body. Identify parts of the body. Talk about what makes us different – comparing. Observe eye colour, hair colour. Name some of the planets-talk about some of the features of planets.	Talk about changes. Make predictions. Make observations of changes in environment. Make predictions- how to melt the ice. Cause and effect – freezing and melting.	Look closely at dinosaurs and their difference/similarities. Talk about how the earth was different in the past and what it is like now. Make predictions, observations and evaluations from experiments – volcano experiment. Making slimy dinosaur swamp with cornflour and water– cause and effect.	Talk about how to stay safe and healthy. Identify healthy foods. Talk about what plants need to grow and to live.	Compare and categorise. Identify and describe minibeasts.	Talk about what materials float and what sink. Make observations. Evaluate – change their bridge/boat if it doesn't work. Reflect on their experiments.
	Creativity & Cultural Development	self portraits Drawing around ourselves in big- adding	painting with ice Painting in snow Observational drawings of trees.	creating volcanoes – cause and effect, reactions. Clay fossils.	role play hospital, vets, fire station and police – making medicines and creating	Creating our own minibeasts. Create small worlds.	Using natural resources to create bridges. Making biscuits.

		in parts of the body we know. Planet printing Role play space station	Collaborative painting with autumnal colours.		vaccines – links to COVID. Gardening.		
	Spiritual Development	Talk about our wishes, family and our believes.		Creation Story – Chrisitan's believe God created Earth. The Big Bang.		Creation Story	
	Community & Courageous Advocacy	Looking at the planet we live on and our immediate environment.			Visit from local nurse/police/forensic scientist. Fairtrade- looking at the communities who grow our food.	Looking after our garden and our planet. Recycling. Feeding birds, growing plants for wildlife. Visit Bishops Water Meadows. Litter picking.	Using natural resources found in our community to understand floating and sinking. Gostrey meadows – dropping things into river to see if they float and sink. Visiting our school pond.
	Health & Wellbeing	how to keep healthy – hand washing when we get to school.	staying safe in the weather – putting on coats, gloves and scarfs. Spending time outside.		Medical science. How to keep healthy. Healthy eating.	Spending time outside, washing our hands. Growing plants- mental health.	Understanding the dangers of water and ovens when cooking. What safety precautions we need to take when doing science experiments.
	Aspiration	astronaut, astronomer		palaeontologist	Doctor. Medical science- links to COVID Forensic scientist, police office, farmer, shop keeper – key worker (Links to covid)	Gardening, farming, biologist	Carrying out experiments. Scientist. Engineer. Baker.
	<u>Vocabulary</u> What key vocabulary will children know that is new?	wrists, elbows, ankles, eye, hair, nostrils, eyebrows, knees, hips,	scientist, experiment, predict.	herbivore, carnivore, claws, teeth, extinct, fossils, eruption, Jurassic, prototyping,	medicine, vaccine,		Floating, sinking, cooking, hot, cold, state, change, materials, dissolve

		spine. Space, astronaut,		experiment, predict, guess, test			
	School Values Friendship, Resilience. Justice, Trust	Friendship – celebrating our differences.	Resilience – not giving up. Friendship – cheering our friends on. Helping our friends, working in a team.	Resilience – not giving up. Friendship – cheering our friends on. Helping our friends, working in a team.	Trust - Medicine – who can we take medicine from?	Resilience – not giving up. Friendship – cheering our friends on. Helping our friends, working in a team.	Resilience – not giving up. Friendship – cheering our friends on. Helping our friends, working in a team.
	British Values democracy, the rule of law, individual liberty, and mutual respect and tolerance of those with different faiths and beliefs	Mutual respect of those who are from different places or who are different to us. Tolerance – believes in how the world was created.	Mutual respect – allowing others to have different ideas. Listening to the ideas of others.	Mutual respect – allowing others to have different ideas. Listening to the ideas of others.	Mutual respect – allowing others to have different ideas. Listening to the ideas of others.	Mutual respect – allowing others to have different ideas. Listening to the ideas of others.	Mutual respect – allowing others to have different ideas. Listening to the ideas of others.

Science	**School Curriculum Intent**	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Knowledge What will children know at the end of this unit of work?	**Animals Including Humans** • Know the names of the parts of the human body. • Know which body part is linked to which sense **Seasons** Observing seasonal changes (Summer to Autumn)	**Animals Including Humans** Identify and name a variety of common animals • knowing the structure of a variety of common animals, including pets. • Identify and name a variety of common animals that are carnivores, herbivores and omnivores.	• **Everyday Materials** •Distinguish between an object and the material it is made from. •identify and name a variety of everyday materials •describe the simple physical properties of a variety of everyday materials. **Seasons** •Know changes across the four seasons (Autumn into Winter)	• **Everyday Materials** •Distinguish between an object and the material it is made from. •identify and name a variety of everyday materials •describe the simple physical properties of a variety of everyday materials. **British Science Week** **Seasons** •Know changes across the four seasons (Winter into Spring)	**Plants** •Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. •Identify and describe the basic structure of a variety of common flowering plants, including trees	**Plants** •Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. •Identify and describe the basic structure of a variety of common flowering plants, including trees. •Observe changes across the four seasons (Spring into Summer)

	<u>Skills</u> As an expert in this subject children will be able to …	Apply scientific vocabulary to naming, identifying and labelling body parts. Using out door resources, recreate face portraits remembering and labelling the key body parts. Carry out simple tests to investigate different senses. Suggest answers to a scientific question. Can you tell which part of your tongue is used to identify different tastes? Observing changes in local environment over time. Outdoor walk, observation and recording. Set up an investigation to record weather conditions in Autumn. Collect data.	Make observations about animals from the animal groups: reptiles, birds, fish, mammals and amphibians. Sort animals into the correct group: reptiles, birds, fish, mammals and amphibians and explain reasoning using shared characteristics within each group Sort and group animals according to the type of food they eat, justifying their choice of classification. I know this because... Compare the body structures of animals from different animal groups. Draw and label the body parts of different animals, including pets	Observing changes in local environment over time. Outdoor walk, observation and recording. Set up an investigation to record weather conditions in Winter. Collect data. **Everyday Materials** Identify the materials objects are made from. Use scientific vocabulary to describe the properties of materials. Using knowledge of simple properties, sort and group materials explaining their grouping criteria. Recognise that the materials can be sorted in more than one way.	**Science Week** Whole school working scientifically focus set each year. **Everyday Materials** •Investigate which material is the best to use to make an umbrella? •Answer a simple question by testing and comparing properties different materials. •Making predictions, recording findings and suggesting answers to a scientific question.	•Observe a range of plants closely using magnifying glasses •Take simple measurements to record the growth of plants. •Identify and name the different parts of a plant structure •Record plant growth over time. •Compare different types of plants, including trees. •Explain the everyday uses of plants (food). •Link taste of plants to human senses	•Observe a range of plants closely using magnifying glasses •Make distinctions between wild plants and garden plants. • Group plants using characteristics •Observe seasonal changes in their local environment. Outdoor walk, observation and recording.

	Creativity & Cultural Development	Using natural resources to create self-portraits. Playdoh animals.	Observe and draw local environment in Autumn.		Designing new products	Drawing plants Drawing trees	Creating a book about plants.
	Spiritual Development	Sense of self	Relationship in a changing world			How plants support and sustain life.	Mindfulness through nature.
	Community & Courageous Advocacy	Care for our natural world.	Caring for local environment			Taking care of plants in our environment.	
	Health & Wellbeing	How do our senses help us to keep safe?	Outdoor walk. Keeping healthy and safe in changing seasons.	Safe outdoors	Safe handling of different materials. Being safe during investigations.	Healthy food – plants. Dangers of some plants	Summer Sun Safety
	Aspiration	Zoo-ologist	Environmentalist	Weather/Meteorology	Chemist/Engineer/ Robotics	Botany, farming, gardening	Botany, farming, gardening
	<u>Vocabulary</u> What key vocabulary will children know that is new?	ears, eyes, hair, mouth, nose Sense, sight, sound, touch, taste, smell, hear, listen, see, tongue, skin. Head, face, arms, legs, hand, foot, fingers, toes. Reptile, fish, amphibian, bird, mammal, fur, beak, wings, tail, scales, gills, fins, claws, feathers, moist skin, webbed feet.	Herbivore, carnivore, omnivore, meat, plants, flowers, seeds, fruit. weather, sunny, rainy, raining, shower, windy, snowy, cloudy, hot, warm, cold, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, rainbow, seasons, winter, summer, spring, autumn, Sun, sunrise, sunset, day length	object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through	object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through	leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud, names of trees in the local area, names of garden and wild flowering plants in the local area.	leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud, names of trees in the local area, names of garden and wild flowering plants in the local area
	<u>School Values</u> Friendship, Resilience. Justice, Trust	Friendship, resilience, Trust	Friendship, resilience, Trust	Friendship, resilience, Trust	Friendship, resilience, Trust	Friendship, resilience, Trust	Friendship, resilience, Trust
	<u>British Values</u> democracy, the rule of law, individual liberty, and mutual respect and tolerance of those with different faiths and beliefs	Listening to different opinions and findings.	Listening to different opinions and findings.	Listening to different opinions and findings.	Listening to different opinions and findings.	Listening to different opinions and findings.	Listening to different opinions and findings.

Science	School Curriculum Intent	Autumn 1 Animals Including Humans	Autumn 2 Living things and their habitats	Spring 1 Uses of everyday materials	Spring 2 Animals including humans	Summer 1 Plants	Summer 2 Plants
Year 2	<u>Knowledge</u> What will children know at the end of this unit of work?	• Notice that animals, including humans, have offspring which grow into adults • Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)	• explore and compare the differences between things that are living, dead, and things that have never been alive • identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other • identify and name a variety of plants and animals in their habitats, including microhabitats	• identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	• Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene • describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. **Science Week**	• observe and describe how seeds and bulbs grow into mature plants • find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	• observe and describe how seeds and bulbs grow into mature plants • find out and describe how plants need water, light and a suitable temperature to grow and stay healthy Generation Restoration topic.
	<u>Skills</u> As an expert in this subject children will be able to …	Identify, sort and classify animals. Name stages of animal life cycles. Compare different life cycles.	Describe differences between things that are living, dead and never alive. Identify, sort and classify objects into living, dead and never alive.	Identify, sort and classify different materials. Comparing suitability of materials by setting up tests.	Ask scientific questions then plan investigate to answer these questions. Plan a scientific test, making predictions as to the outcome.	Describe what plants need to grow and stay healthy. Set up a test to show the conditions plants need to grow.	Seeking patterns in the plants. Observation of plant growth over time. Identify plants that have grown well in different conditions.

		Present research findings.	Observing and identifying plants and animals in a microhabitat. Seeking patterns in micro habitats. Describe a world habitat and identify plants/animals that live in them.	Observe how materials can change. Interpreting and communicating results. Use knowledge of materials to sort, group and classify recycling.	Measuring and recording results. Evaluate outcomes of scientific enquiry. Science Week whole school focus.	Observe and describe what seeds and bulbs need to grow into mature plants.	
	Creativity & Cultural Development		Researching world habitats.	Create a new product using existing materials.	Create a boat	Seed diaries for sunflowers	Trip to Wisley gardens – observe environments and garden sculptures
	Spiritual Development	How we grow as humans.		Designing for a purpose		Natural world and life cycles.	Nature and mindfulness
	Community & Courageous Advocacy		Care for our school habitats and their impacts on the wider ecosystem.	John McAdam, Charles Macintosh and John McAdam – inventors who use existing materials to create something new. Sustainability.	Amelia Earheart – flight. Space travellers – Neil Armstrong, Tim Peake.	Visit to local community green space. Being respectful of it.	Sharing an open space with others.
	Health & Wellbeing	Hand hygiene, healthy diet, needs for survival.	Protecting habitats.	The importance of recycling	Using materials safely and for the correct purpose.	Enjoying the different features of nature.	Learning outside of our school environment.
	Aspiration	Healthy lifestyle	Conservation of habitats, animals, plants.	Recycle	Overcoming huge challenges to conquer flight.	To know where our food comes from.	Nutrition science
	<u>Vocabulary</u> What key vocabulary will children know that is new?	offspring, reproduction, growth, baby, toddler, child, teenager, adult, old person, names of animals and their babies (e.g. chick/hen, kitten/cat,	living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed, water, air, survive, survival, names of local habitats (e.g. pond,	Names of materials – wood, metal, plastic, glass, brick, rock, paper, cardboard Properties of materials – as for Year 1 plus opaque, transparent and translucent,	Food, food chain, survive, survival, water food, air, exercise, heartbeat, breathing, hygiene, germs, disease, food types (e.g. meat, fish,	light, shade, Sun, warm, cool, water, space, grow, healthy, bulb, germinate, shoot, seedling	light, shade, Sun, warm, cool, water, space, grow, healthy, bulb, germinate, shoot, seedling, survive, thrive, suited.

		caterpillar/butterfly), survive, survival, water food, air	woodland etc.), names of micro-habitats (e.g. under logs, in bushes etc.), conditions, light, dark, shady, sunny, wet, damp, dry, hot, cold, names of living things in the habitats and micro- habitats studied.	reflective, nonreflective, flexible, rigid Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching	vegetables, bread, rice, pasta, dairy)		
	<u>School Values</u> Friendship, Resilience. Justice, Trust	Friendship, resilience	Justice for animals	Working with others – co-operation and teamwork. Fellowship and trust.	Resilience, trust.	Friendship	Justice
	<u>British Values</u> democracy, the rule of law, individual liberty, and mutual respect and tolerance of those with different faiths and beliefs	Tolerance of each others differences.	Conservation, respect of other living things and their habitats.	Sustainability, care for the planet, recycling.			Respecting open areas and shared spaces.

Science	**School Curriculum Intent**	Autumn 1 Rocks and Soils	Autumn 2 Rocks and Soils	Spring 1 Light	Spring 2 Forces and Magnets	Summer 1 Food and our bodies	Summer 2 Plants
Year 3	<u>Knowledge</u> What will children know at the end of this unit of work?	Understand the layers of the earth. How rocks are formed Uses of different types of rocks. How fossils are formed How soil varies depending on the rocks within it and how this links to knowledge of rocks	Understand the layers of the earth. How rocks are formed Uses of different types of rocks. How fossils are formed How soil varies depending on the rocks within it and how this links to knowledge of rocks	How light is reflected How shadows are formed by an object blocking light That some materials absorb or reflect light	Recognise forces around us; know that magnets create an invisible force; recognise the many uses of magnets in everyday life.	How nutrition from food is important for our bodies; Why we have a skeleton; Comparing animals with and without skeletons	Identify and describe the functions of parts of a plant. Explore what plants need to live and grow.
	<u>Skills</u> As an expert in this subject children will be able to …	Carry out an investigation to test	Explore properties of a sample of rock types	Investigate how to change the size of a shadow.	Test the effect of forces.	Explain what each food group is and consists of.	Investigate how water is transported. Leaf investigation

		permeability of soil types. Explore properties of a sample of rock types through series of tests.	through series of tests. Make and excavate fossils Rock Walk	How to test which materials reflect light. Which materials are transparent/opaque/translucent?	Investigate are all magnets equally strong? Are all objects attracted to magnets?	Collect data based on own eating habits. Name scientific bones in the body. Group animals depending on skeletons.	Dissect a flower to identify its parts. Draw and label plant parts. Order the stages of a plant lifecycle.
	Creativity & Cultural Development			making a mirror maze			Recognising plants in surroundings and their importance.
	Spiritual Development	How our world is formed.				Our bodies and how they help us.	
	Community & Courageous Advocacy		Science in the world around us				
	Health & Wellbeing	Safety with examining rocks using tools.				Learning what healthy eating is; balanced diets; exercise for healthy lifestyles.	
	Aspiration	Visiting geologist			Visiting chiropractor	Staunton Country Park Joining gardening club	
	<u>Vocabulary</u> What key vocabulary will children know that is new?	rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorbs water, fossil, bone, flesh, minerals, marble, chalk, granite, sandstone, slate, types of soil (e.g. peaty, sandy, chalky, clay)	rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorbs water, fossil, bone, flesh, minerals, marble, chalk, granite, sandstone, slate, types of soil (e.g. peaty, sandy, chalky, clay)	light, light source, dark, absence of light, surface, shadow, reflect, mirror, Sun, sunlight, dangerous, opaque	force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole	omnivore herbivore carnivore Exoskeleton endoskeleton nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, joints, support, protect, move, skull, ribs, spine	photosynthesis, pollen, insect/wind pollination, male, female, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal), air, nutrients, minerals, soil, absorb, transport Root/ nutrients transportation Stem Flower Anther/filament

							Style sepal stigma/stamen
	School Values Friendship, Resilience. Justice, Trust	Collaboration in group experiments	Collaboration in group experiments	Collaboration in group experiments	Collaboration in group experiments	Collaboration in group experiments	Collaboration in group experiments
	British Values democracy, the rule of law, individual liberty, and mutual respect and tolerance of those with different faiths and beliefs	Recognising others may have different predictions/opinions and that is ok.	Recognising others may have different predictions/opinions and that is ok.	Recognising others may have different predictions/opinions and that is ok.	Recognising others may have different predictions/opinions and that is ok.	Recognising others may have different predictions/opinions and that is ok.	Recognising others may have different predictions/opinions and that is ok.

Science	**School Curriculum Intent**	Autumn 1 States of Matter	Autumn 2 Electricity	Spring 1 Animals including humans The digestive System	Spring 2 Sound	Summer 1 Living things and their habitats	Summer 2 Animals including humans
Year 4	Knowledge What will children know at the end of this unit of work?	Define characteristics of solids and liquids To understand that gas is a material even though you can't see it To know that ice melts when it is heated, and the hotter the temperature, the quicker it melts To know that condensation happens when water vapour turns back into a liquid	To know how to stay safe when using electricity To know that a working circuit needs a cell, a component and wires to make a complete loop with no breaks. To know which materials are insulators and which are conductors	To know the names of the organs involved with digestion and their role in the process. To know how the body digests food. To know that other animals have different digestive systems to humans. To name the different teeth that humans have and their functions.	To know that a sound is made because a material is vibrating. To know that you can change the volume of a sound by how hard you hit the object To know that you can change the pitch of a sound by making the drum skin tighter or looser, the string thinner, shorter, longer or thicker. To know that the amount of air inside an	To know the 7 life processes. To be able to identify living and non-living things. To know the 5 main animal groups and their characteristics. To know how a branching database works and create their own. To identify vertebrates and invertebrates.	To create foodchains to show the feeding relationships between different organisms. To create foodchains for different environments. To know how humans are helping to protect our environment. To know how humans are damaging our environment.

				To know how to keep teeth health and how teeth decay. To know that different animals have different teeth depending on their diet.	instrument can also change the pitch. To know how to insulate sound. To know how we hear sounds		To know the effect of pollution on living organisms.
	<u>Skills</u> As an expert in this subject children will be able to …	To explain findings using simple scientific language. To use diagrams to show what they did. To make predictions. To collect results accurately To use line graphs To choose a question to investigate, plan and carry out a full investigation.	To spot hazards and explain why they are hazardous To make predictions about which circuits will work To test materials to see if they are insulators or conductors of electricity. To explain why circuits worked / didn't work.	To be able to explain why humans have different types of teeth and different animals have different teeth. To predict which teeth an animal would have based on it's diet. To recreate the digestive system and explain what is happening at each stage and why this happens. To use previous knowledge to predict what other animal's digestive systems are like. To make predictions To make careful observations and	To investigate instruments and the sounds they make. To investigate the effect on pitch and volume when they play instruments in different ways. To interpret and explain different sound waves. To carry out an investigation to find the best sound insulator by collecting accurate results and recording these to base their conclusions on.	To explain how different organisms do the 7 life processes – including plants. To observe, identify and record living organisms within a environment. To observe features of living things. To sort organisms into different groups depending on their features. To choose questions carefully to create a branching database. To classify vertebrates, invertebrates and plants.	To explain what effect changes in populations has on organisms within a food chain. To explain the differences between local food chains and food chains from different environments. To explain the effect of deforestation on living organisms.

				record these using scientific terminology. To draw clear labelled diagrams To make conclusions from results			
	Creativity & Cultural Development	Models/Drawings of particles				Awareness of different environments	Awareness of different environments
	Spiritual Development				Sounds in our environment and how they make us feel.	What we need to survive.	
	Community & Courageous Advocacy		Keeping others safe				Litter picking
	Health & Wellbeing		How to use electricity safely.	How to keep your teeth healthy	When and how people have to / need to protect their hearing		How to live in an environmentally friendly way.
	Aspiration	Future Scientists		Introduction to human biology – doctors / nurses as a career			To create a vision for how we want the world to be in the future and starting working towards making that vision come true.
	<u>Vocabulary</u> What key vocabulary will children know that is new?	solid, liquid, gas, heating, cooling, state change, melting, freezing, melting point, boiling, boiling point, evaporation, condensation, temperature, water cycle	electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer,	incisor, canine, molar, premolar, herbivore, carnivore, omnivore, producer, predator, prey digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach,	sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, quiet, loud, insulation Sound waves Frequency Skin Strings	classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate	Food chain Organisms Predator Producer Top predator Prey Energy Herbivore Carnivore Omnivore Environment

			motor, conductor, insulator, metal, non-metal, symbol	small intestine, large intestine, rectum, anus	Air, Ear, Hearing		Nature reserve Litter Deforestation
	School Values Friendship, Resilience. Justice, Trust	Working together as a team	Working together as a team	Working together as a team	Working together as a team	Working together as a team	Justice – working to make the world a place where all living things are respected.
	British Values democracy, the rule of law, individual liberty, and mutual respect and tolerance of those with different faiths and beliefs	Freedom of choice to compose own investigation.	Freedom of choice to compose own investigation.	Freedom of choice to compose own investigation.	Freedom of choice to compose own investigation.	Freedom of choice to compose own investigation.	Freedom of choice to compose own investigation.

Science	**School Curriculum Intent**	Autumn 1 **Forces**	Autumn 2 **Earth and Space**	Spring 1 **Properties and changes of materials**	Spring 2 **Living things and their habitats**	Summer 1 **Generation Restoration Science Project**	Summer 2 **Animals, including humans**
Year 5	Knowledge What will children know at the end of this unit of work?	Understand how and why the drag forces slow moving objects down. Know how levers, pulleys, gears and springs work, and how they transfer force and motion.	Understand the way that the Earth moves relative to the Sun, and the Moon relative to the Earth. Know why it isn't the same time all over Earth simultaneously. Understand the difference between the heliocentric and geocentric models.	Understand that some changes result in transformation of new materials, and that this kind of change is not usually reversible.	Know the life process of reproduction in some plants.	The importance of bees in the environment and the impact they have. Design and make a bee hotel.	Understand the changes in humans as they develop from birth to death. Understand the changes experienced in puberty.
	Skills As an expert in this subject children will be able to …	-Plan enquiries including recognising and controlling variables where necessary.	-Report findings from enquiries, including conclusions, casual relationships and explanations.	-Plan enquiries including recognising and controlling variables where necessary.	-Plan enquiries including recognising and controlling variables where necessary.	-Report findings from enquiries, including conclusions, casual relationships and explanations.	- Can explain the changes that takes place in boys and girls during puberty

		-Take measurements, using a range of scientific equipment. -Record data and results using scientific diagrams and tables. -Use test results to make predictions to set up further comparative and fair tests. -Present findings in oral and written forms.	-Identify scientific evidence that has been used to support or refute ideas or arguments.	-Take measurements, using a range of scientific equipment. -Record data and results using scientific diagrams and tables. -Use test results to make predictions to set up further comparative and fair tests. -Present findings in oral and written forms.	-Record data using scientific diagrams, classification keys, tables, bar and line graphs, and models. -Report findings from enquiries, including conclusions and explanations of degree of trust in results, in oral and written forms.	-Identify scientific evidence that has been used to support or refute ideas or arguments.	- Can explain how a baby changes physically as it grows, and also what it is able to do
	Creativity & Cultural Development	-Designing, making and testing boats (water resistance). -Making and testing parachutes (air resistance). -Making and testing friction ramps.		- create and composing their own investigations	-Set up a garden/flower bed or vegetable plot.	Create a bee book	
	Spiritual Development						Discussions around birth and death.
	Community & Courageous Advocacy				Care for our local environment		
	Health & Wellbeing		Light and Day			Engaging with the natural environment	Learning about their own bodies and how to keep hygienic.
	Aspiration	Future scientists	Future scientists Physics and space	Future scientists	Future scientists Landscape designer	Ecologist	Medical Science
	<u>Vocabulary</u> What key vocabulary will children know that is new?	-drag force -gears -levers -pulleys -springs -transference of force and motion -air/water resistance	-axis -celestial body -comets -Earth's rotation -elliptical orbit -gravitational force	-buoyancy -change of state -chemical changes -chemical reaction -density -dissolving -elasticity -electrical conductivity	-carpel -cross-pollination -embryo -life cycle -microorganisms -ovaries -sexual reproduction -stamen	Bees Honey Survival	-asexual reproduction animal behaviourist -chromosomes -fallopian tubes -gestation -hormones -male/ female gamete -menstrual cycle

		-friction -gravity	-heliocentric/ geocentric model of the solar system -hemisphere -time zones	-evaporating -filtering -magnetism -reversible/irreversible changes -polymer -solubility -solute -solution -solvent -thermal conductivity	-stigma -style -vertebrates		-penis -ovulation -placenta -puberty -sperm -testes -uterus -zygote
	School Values Friendship, Resilience. Justice, Trust	Friendship, Resilience, Trust	Friendship, Resilience Trust	Friendship, Resilience Trust	Friendship, Resilience Trust	Friendship, Resilience Trust	Friendship, Resilience Trust
	British Values democracy, the rule of law, individual liberty, and mutual respect and tolerance of those with different faiths and beliefs	Freedom of choice to compose own investigation.	Freedom of choice to compose own investigation.	Freedom of choice to compose own investigation.	Freedom of choice to compose own investigation.	Freedom of choice to compose own investigation.	Freedom of choice to compose own investigation.

Science	School Curriculum Intent	Autumn 1 Electricity	Autumn 2 Light	Spring 1 Living things and their habitats	Spring 2 Animals including humans	Summer 1 Evolution and inheritance	Summer 2 Evolution and inheritance
Year 6	Knowledge What will children know at the end of this unit of work?	**ELECTRICITY** Associate brightness of a lamp or volume of a buzzer with number of cells using a circuit. Use recognised symbols when representing a simple circuit. Construct simple circuits with a variety of components s and explore variations in how components function.	**LIGHT** How light travels, how light helps objects be seen, why shadows have the same shape as the objects that cast them.	**LIVING THINGS AND THEIR HABITATS** Describe how living things are classified into broad groups. Give reasons for classifying plant and animals based on specific characteristics. Use and create classification keys.	**ANIMALS INCLUDING HUMANS** Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.	**EVOLUTION AND INHERITANCE** Recognise that living things have changed overtime, that fossils provide information, recognise that living things produce offspring of the same kind, identify how animals and plants	**EVOLUTION AND INHERITANCE** Recognise that living things have changed overtime, that fossils provide information, recognise that living things produce offspring of the same kind, identify how animals and plants

				Research the work of scientists such as Carl Linnaeus.	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe the ways in which nutrients and water are transported within animals, including humans.	are adapted to their environment and who Charles Darwin is.	are adapted to their environment and who Charles Darwin is.
	<u>Skills</u> As an expert in this subject children will be able to …	To make predictions about which circuits will work with different components To carry out investigations To plan an investigation with a fair test To collect results and write a conclusion	To explain how light travels using scientific diagrams Make predictions, observe and record results. Present findings using tables and graphs. Interpret results	Independently group, classify and describe living things and materials; use and develop keys and other information records to identify, classify and describe living things and materials;	Make a model of a heart. Make predictions, observe and record results. Present findings using tables and graphs. Interpret results.	Research how fossils link to evolution. Explain how animals are adapted to their environments.	Research and findings on the work of Charles Darwin. Carry out a bird beak investigation. Present findings about inherited and acquired characteristics.
	Creativity & Cultural Development		Colour spectrum		Using different modelling materials		
	Spiritual Development					Explore human origins.	
	Community & Courageous Advocacy			Looking after habitats			
	Health & Wellbeing	Staying safe around electricity			Healthy heart		
	Aspiration				Medical professions		Ecologist

	Vocabulary What key vocabulary will children know that is new?	Circuit, voltage, cell, component, series and parallel.	Reflection, absorb, translucent, transparent, opaque.	Classification, characteristic, microorganism, invertebrate, vertebrate.	heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, cycle, circulatory system, diet, drugs, lifestyle	Offspring, adaptation, environment, biome, palaeontologist, Darwin.	Offspring, sexual reproduction, vary, characteristics, adapted, inherited, species, evolve, evolution
	School Values Friendship, Resilience. Justice, Trust	Working collaboratively Friendship, resilience, trust	Working collaboratively Friendship, resilience, trust	Working collaboratively Friendship, resilience, trust	Working collaboratively Friendship, resilience, trust	Working collaboratively Friendship, resilience, trust	Working collaboratively Friendship, resilience, trust
	British Values democracy, the rule of law, individual liberty, and mutual respect and tolerance of those with different faiths and beliefs	Freedom of choice to compose own investigation.	Freedom of choice to compose own investigation.	Freedom of choice to compose own investigation.	Freedom of choice to compose own investigation.	Freedom of choice to compose own investigation.	Freedom of choice to compose own investigation.